Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A process for generating with high speed a curved surface on a workpiece, using a numerical control (NC) processor comprising a work spindle to hold a workpiece thereon, the work spindle being supported for rotation on a headstock, a Z-axis table allowing the work spindle to move in reciprocation in a Z-axis direction, an X-axis table arranged in opposition to the work spindle in a way allowed to move in reciprocation in an X-axis direction perpendicular to the Z-axis direction, a turner base fastened to the X-axis table, a slider allowed to move back and forth over the turner base in a Y-axis direction parallel with the Z-axis direction, a cutting tool mounted to the slider, and a driving means to force the slider in reciprocation in the Y-axis direction;

wherein an acceleration of the slider in reciprocation is set to a predetermined desired acceleration, a rotating velocity of the work spindle is varied in terms of the predetermined acceleration, and movements of the slider in the Y-axis direction and the X-axis table in the X-axis

direction are made synchronization with the varied rotating velocity of the work spindle, whereby the cutting tool generates a desired curved surface on a surface of the workpiece lying perpendicular to the Y-axis direction of the cutting tool.

2. (Original) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein the driving means is any one of a linear motor and a rotary servomotor.

3. (Currently Amended) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein the predetermined acceleration of the slider in reciprocation is set to a top acceleration ~~or less~~ in reciprocation permitted to the slider.

4. (Original) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein the rotating velocity of the work spindle is made varied to increase with any one of linear and curved changing rate to keep the acceleration of the slider constant.

5. (Original) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein the Z-axis table on which the work spindle is mounted

is moved in the Z-axis direction throughout cutting operation with the cutting tool into the workpiece, and the movement of the Z-axis table in the Z-axis direction is made synchronized one another with the varied rotating velocity of the work spindle, the movement of the slider in the Y-axis direction and the movement of the X-axis table in the X-axis direction.

6. (Currently Amended) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein procedure to cut the desired curved surface on the workpiece is performed by making use of a prediction learning control and a learning control where angle pulses are used at repeated periods with taking into account ~~pseudo-instructions~~ instructions which are fed back repeatedly to the work spindle at every angular cycle.

7. (Original) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein a stroke of reciprocation in the Y-axis direction of the slider to which the cutting tool is mounted is set to a value found by taking away a stroke in Z-axis direction of the work spindle on which the workpiece is held, whereby the workpiece is cut into the desired curved surface.

8. (Original) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein the desired cut surface on the workpiece is a toric surface where a curvature in one meridian has a radius while another curvature in a perpendicular meridian has another radius, and wherein a travel amount in the Z-axis direction of the work spindle on which the workpiece is held is set to a travel amount corresponding to the radius of curvature in one meridian while a travel amount in the Y-axis direction of the slider on which the cutting tool is mounted is set to a difference between a travel amount corresponding to the radius of curvature in the perpendicular meridian and a travel amount corresponding to the radius of curvature in the one meridian.

9. (Original) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein the workpiece on which the desired curved surface is generated is a spectacle lens.

10. (Original) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein the slider makes N times reciprocation every one rotation of the work spindle.

11. (Currently Amended) A process for generating with high speed a curve surface on a workpiece, as set forth in ~~claim 1~~ claim 2, wherein the linear motor to force the slider to move in and out is comprised of a field magnet associated with any one of the slider and the turner base, and an armature winding associated with the other.

12. (Currently Amended) A process for generating with high speed a curve surface on a workpiece, as set forth in claim 1, wherein the turner base on which the linear motor is mounted is provided with a linear scale to ~~monitoring~~ monitor a position of the turner base.